

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on 5/21/2010 has been entered. Claims 1, 11, 22 are cancelled; claim 2 is amended; and claims 24-28 are added. Accordingly, claims 2-10, 12-21 and 23-28 are currently pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. It is noted that applicant's attorney Donald Daley authorized the following amendment to claim 28 - Delete "surface of the water absorbent resin (A)" (line 5) after "having a cross-linked surface" (lines 4-5) and before "," (line 5) (cf. interview summary).

### ***Claim Rejections - 35 USC § 103***

4. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mertens et al (WO 00/53644) in view of Nakashima et al (US 2004/0106745 A1).

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It is noted that WO 00/53644 (WO) is being utilized for date purposes. However, since WO is not in English, US equivalent for WO, namely, Mertens et al (US 6, 605, 673 B1) is referred to in the body of the rejection below. All column and line citations are to the US equivalent.

Mertens et al disclose in example 1, a polyacrylic acid powder obtained by the polymerization of acrylic acid (i.e. reads on unsaturated monomer containing an acid group) which is crosslinked using a mixture of crosslinkers (i.e. reads on particulate water absorbent resin (A) having a crosslinked structure). The particles are screened to a size of 150 to 850  $\mu\text{m}$  (i.e. reads on 95 wt% or more particles having a particle diameter less than 850  $\mu\text{m}$  and not less than 106  $\mu\text{m}$ ). The obtained polymer powder is treated with a solution of ethylene glycol and aluminum sulfate 14-hydrate (i.e. reads on surface crosslinking and multivalent metal component of instant claim) (bridging paragraph col. 9-10). See table (col. 10, lines 10-15) wherein example 1 has a TB of 28.5 g/g (i.e. reads on CRC of instant claim), AAP<sub>0.7</sub> of 25 g/g (i.e. reads on AAP of instant claim), and SFC of  $65 * 10^{-7} \text{ cm}^3.\text{s/g}$  (i.e. reads on SFC of instant claim). See col. 8, lines 38-67, wherein Mertens et al disclose the test conditions for measuring TB (immersed in 0.9% NaCl for 30 minutes without any load) and AAP (absorb 0.9 wt% saline is absorbed for 1 hour under a pressure load of 50 g/cm<sup>2</sup>) which meet the instantly claimed test conditions. It is noted that 50 g/cm<sup>2</sup> is equivalent to 0.7 psi. From 0 to 30 wt% of water-soluble polymer is included as water-soluble polymer (col. 5, lines 49-51) which reads on water-soluble component of 35 wt% or less in instant claim.

Mertens et al are silent with respect to weight average particle diameter, logarithmic standard deviation and metal extraction rate.

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However, Nakashima et al teach water absorbing agent having weight average particle diameter of 300 to 600  $\mu\text{m}$  (abstract). Case law holds that when the range of instant claims and that disclosed in prior art overlap, a prima facie case of obviousness exists. See *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). See MPEP § 2144.05. The water absorbing agent includes particles having particle diameter of smaller than 850  $\mu\text{m}$  but not smaller than 150  $\mu\text{m}$  (paragraph 0135) as in Mertens et al and instant claims. The water absorbing agent includes particles from at least two members selected from particles (A1) having particle diameter of from 600  $\mu\text{m}$  to 850  $\mu\text{m}$ ; (A2) having particle diameter of from 500  $\mu\text{m}$  to 600  $\mu\text{m}$ ; (A) having particle diameter of from 300  $\mu\text{m}$  to 500  $\mu\text{m}$ ; and (A4) having particle diameter of from 150  $\mu\text{m}$  to 300  $\mu\text{m}$  (paragraph 0136). The high properties are achieved because of controlling such specific diameter distribution (paragraph 0137). The absorption rate which is dependent upon the surface area of particle is controlled in good balance because the water absorbent agent includes particles having the respective particle diameter ranges (paragraph 0138). Therefore, in light of the teachings in Nakashima et al and case law, it would have been obvious to one skilled in art at the time invention was made to select the overlapping range of from 300 to 500  $\mu\text{m}$ , for weight average particle diameter, to obtain desirable properties, such as controlled absorption rate.

With respect to the logarithmic standard deviation, given that particle diameter of water absorbent resin ranges from 150  $\mu\text{m}$  to 850  $\mu\text{m}$  in Mertens et al, Nakashima et al and instant claims, and the average particle diameter in Nakashima et al, overlaps with instantly claimed average particle diameter of 300 to 500  $\mu\text{m}$ , reasonable basis exists for one skilled in art to expect the logarithmic standard deviation of the particle size distribution of the water absorbent resin composition, of Mertens et al in view of

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Nakashima et al, to be 0.45 or less as in instant claims. Since PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobviousness difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

With respect to the metal extraction rate, given that water absorbent resin composition of Mertens et al comprises substantially similar components as in instant claims (i.e. water absorbent resin and a polyvalent metal compound, such as aluminum sulfate 14-hydrate on the surface of water absorbent resin), metal extraction rate of 8.0 wt% or more and less than 90 wt% is intrinsically present in the water absorbent resin composition of Mertens et al, absent evidence to the contrary. Since PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobviousness difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

***Allowable Subject Matter***

5. An updated search was conducted and no new art was found. Thus, reasons for allowance of claims 3-10, 12-21 and 23 remain the same. Newly added claims 24-27 and amended claim 2 depend from allowed claim 23, hence are allowed for the same reasons set forth in paragraph 5 of notice of allowance mailed 2/23/2010. Accordingly, claims 2-10, 12-21 and 23-27 are allowed.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karuna P Reddy/  
Examiner, Art Unit 1796